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2        ABSTRACT OF THE DISCLOSURE UNDER 37 C.F.R. §1.72(b)

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4        An  $N^2$  algorithm for optimizing correlated events, applicable to the optimization  
5        of the detection of redundant tests and inefficient tests (RIT's), is disclosed.  
6        This algorithm represents a set of N tests with L defects as N L-dimensional  
7        correlation vectors. The  $N^2$  algorithm optimizes in terms of the minimum set  
8        of vectors, and the set of vectors that take the minimum time to detect the L  
9        defects. The minimum set optimization determines a set of vectors (tests)  
10      that contains the minimum number of vectors (tests) by analyzing the  
11      correlation among the N vectors. This minimum set optimization provides the  
12      minimum test set containing all defects in an algorithm that takes  $O(N^2)$   
13      operations. The minimum time optimization determines a sequence of  
14      vectors (tests) that will detect the defects in a minimum amount of time.  
15      Taking into the account of the different execution time of each vector (test),  
16      the algorithm analyzes the complicated correlation among the vectors (tests)  
17      and gives an optimized sequence of vectors (tests) within  $O(N^2)$  operations.  
18      The optimized sequence of vectors (tests) takes a minimum amount of time to  
19      find all the defects.